

Title: Programming language and IDE for Lego Mindstorms NXT

Author: Jan Pelc

Department: Department of Software Engineering

Supervisor: RNDr. Jana Štanclová, Ph.D.

Supervisor's e-mail address: Jana.Stanclova@ruk.cuni.cz

Abstract: The work is focused on design and implementation of a classical programming language for the standard firmware of robotics platform Lego Mindstorms NXT, with respect to less experienced programmers. The work contains a brief description of the target platform and the communication interface between the controller unit and a PC, and an overview of available tools for creating programs for this platform. In the last part, our library for communication with the controller unit is described, and possibilities for remote debugging of programs running on this unit are analysed.

Keywords: robotics, Lego Mindstorms NXT, programming language design, compiler implementation, remote debugging